INTRODUCTION

EnSight provides a full-featured X-Y plotting system fully integrated with the query and transient data handling capabilities. Query entities (see How To Query/Plot) are assigned to *plotters*. Plotters display one or more curves where each curve is based on the data from a single query entity. If the query entity is changed, the corresponding curve will automatically update. Plotter attributes (controlling aspects of appearance such as color of curves and titles, axis labeling, gradation and tick marks, and border/background color) can be edited in Plot Mode.

This article is divided into the following sections:

> **Anatomy of a Plotter**
> **Create Plotters**
> **Select Plotters and Curves**
> **Move and Resize Plotters**
> **Set Plotter Visibility**
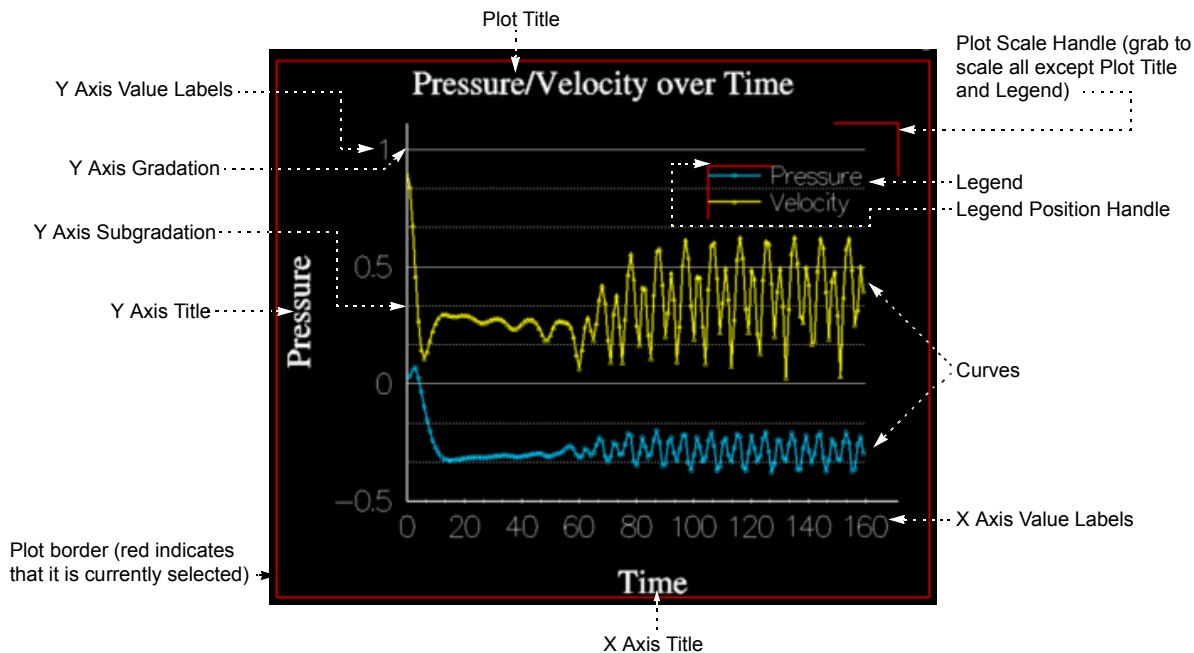> **Set Title, Background, Legend, Border, Position Attributes**
> **Set Axis Attributes**
> **Set Curve Attributes**
> **Delete Plotters**

Anatomy of a Plotter

Plotters are composed of the following fundamental components:

Create Plotters

Plotters are automatically created when you assign a query entity to a new plotter (see **How To Query/Plot** for details).

Select Plotters and Curves

When you create a new plotter, it automatically becomes the *currently selected plotter* (as shown by the border drawn in the default highlight color). Any action to change plotter attributes always operates on the currently selected plotter(s) (or the plotter defaults if none are selected). To select plotters:

1. Click Plot in the Mode Selection area to enter Plot mode.

2. Move the mouse pointer into the Graphics Window and click the left mouse button anywhere within the desired plotter. You can add to an existing selection by holding down the Control key as you click in additional plotters.

Since plotters may contain multiple curves, it is necessary to select individual curves within a plotter for subsequent action. If no curves are selected, changes to curve attributes reset the defaults for subsequently created curves. To select curves within a plotter:

1. Click Plot in the Mode Selection area to enter Plot mode.

2. Move the mouse pointer into the graphics window and click the left mouse button on the desired curve. You can add to an existing selection by holding down the Control key as you click on additional curves.

Move and Resize Plotters

Plotters can be easily moved and resized. You can either reposition a plotter with the mouse in the Graphics Window, or precisely by entering exact values. To move or resize a plotter interactively:

1. Click Plot in the Mode Selection area to enter Plot mode.

2. Select the desired plotter (as described above).

3. To move a plotter, move the mouse pointer into the Graphics Window and into the selected plotter. Click and hold the left mouse button and drag the plotter to the desired location.

4. To resize a plotter, move the mouse pointer into the Graphics Window and place the it over one corner or side of the selected plotter. Click and hold the left mouse button and drag the corner or side to the desired location.

A plotter can also be positioned precisely. See **below** for details.

Set Plotter Visibility

Selected plotters can be made invisible:

1. Click Plot in the Mode Selection area to enter Plot mode.

2. Select the desired plotter(s).

3. Click the Plotter Visibility Toggle to toggle display of the selected plotters on or off (when not in Plot Mode). ·············▶

Plotters that are currently invisible are displayed dimmed while in Plot mode.

Set Title, Background, Legend, Border, Position Attributes

Overall attributes of plotters are controlled through the Plotter Specific Attributes dialog:

1. Click Plot in the Mode Selection area to enter Plot mode.

2. Select the desired plotter(s).

3. Click the Graph Attributes icon. ....▶

The Plotter Specific Attributes dialog contains five sections: Title, Background, Legend, Border, and Position. Click the button at the top to display the corresponding section.

The Title section controls the main title at the top of the plotter (remember to press return after changing a text field):

Set title text ....

Set the size of the title text...................

Set the text color (either enter new values in the RGB fields or click the Mix... button to open the **Color Selector** dialog)................

If you desire special symbols, click Insert Symbol, pick the symbol(s), close, then hit return in the title field.

Plotter Specific Attributes(Title)

Title | Background | Legend | Border | Position

Title : Pressure/Velocity over Time

Insert Symbol...

Size : 55.000

R 1.00   G 1.00   B 1.00   Mix...

Close   Help...

The Background section controls the type and color of the plotter background:

Set background type to either None or Solid. A solid background is opaque. ....

If the background type is Solid, set the color (either enter new values in the RGB fields or click the Mix... button to open the **Color Selector** dialog). ....

Plotter Specific Attributes(Background)

Title | Background | Legend | Border | Position

Type : Solid

R 0.00   G 0.00   B 0.00   Mix...

Close   Help...

The Legend section controls the plotter legend text. The actual text in the legend is specific to the individual curves displayed in the plotter. See **Set Curve Attributes** below.

Toggle legend visibility ....

Set text size....................

Set origin (with respect to lower left corner of plotter) ....

Set text color (either enter new values in the RGB fields or click the Mix... button to open the **Color Selector** dialog) ....

Plotter Specific Attributes(Legend)

Title | Background | Legend | Border | Position

☐ Visible   Text Size 35.000

Origin X 0.800   Y 0.800

R 1.00   G 1.00   B 1.00   Mix...

Close   Help...

The Border section controls the visibility and color of the plotter border:

Plotter Specific Attributes(Border)

| Title | Background | Legend | **Border** | Position |

Toggle border visibility ·········· → ☐ Visible

Set border color (either enter new values in the RGB fields or click the Mix... button to open the **Color Selector** dialog) ··········

R [1.00]   G [1.00]   B [1.00]   Mix...

Close   Help...

The Position section controls the size and position of the plotter:

Plotter Specific Attributes(Position)

| Title | Background | Legend | Border | **Position** |

Set the origin of the plotter (with respect to the lower left corner of the Graphics Window). ··········

Origin X [0.100]   Y [0.100]

Set the plotter width/height (0-1 normalized to the width and height of the Graphics WIndow) ··········

Width [0.400]   Height [0.300]

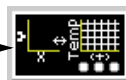Close   Help...

Set Axis Attributes

Axis attributes of plotters are controlled through the Axis Specific Attributes dialog:

1. Click Plot in the Mode Selection area to enter Plot mode.

2. Select the desired plotter(s).

3. Click the Axis Attributes icon.

The Axis Specific Attributes dialog contains three sections: General, X-Axis, and Y-Axis. Click the button at the top to display the corresponding section.

The General section controls axis width, color, and scaling as well as Gradation and Subgradation marks.

Set line width of axes

Set color of axes

Set auto scaling - when on, the Min/Max values and the number of gradations (attributes for the X-Axis and Y-Axis) will be used as suggested values to arrive at pleasing numbers for the axis labels.

Set line width, style, and color for major gradations (gradations are enabled on a per-axis basis in the X-Axis and Y-Axis sections)

Set line width, style, and color for subgradations (subgradations are enabled on a per-axis basis in the X-Axis and Y-Axis sections)

Axis Specific Attributes(General)

General X-Axis Y-Axis

Both Axes

Line Width 1 Pixel

R 1.00 G 1.00 B 1.00 Mix...

☐ Auto Axis Scaling

Gradation/Grid

Line Width 1 Pixel   Line Style Solid

R 1.00 G 1.00 B 1.00 Mix...

Sub-Gradation/Sub-Grid

Line Width 1 Pixel   Line Style Dotted

R 1.00 G 1.00 B 1.00 Mix...

Close   Help...

The X-Axis section controls the title, value labels, and gradation marks for the X axis. (The Y-Axis section is similar and is not presented here).

Toggle visibility of the X axis line

Set the X origin location of the plot (with respect to the left edge of the plotter)

Set the width of the plot (with respect to the width of the plotter)

Set the title of the X axis

Set the size of the title of the X axis

Set the color of the title of the X axis

Set the type of axis label: None (show no value labels), All (show value labels at each gradation), or Beg/End (show only the first and last value labels)

Set the size of the X axis value labels

Set the scale to linear or logarithmic(log10)

Set the min/max range of the variable displayed on the X axis (Note: will be used as exact values only if the Auto Axis Scaling toggle under the General Section is off.)

Set the display format of the value labels (or click Format... to select common formats from a list)

Set the color of the X axis value labels

Set the type of gradation: None (no gradation marker), Grid (a vertical line), or Tick (a mark on the axis at the value label positions)

Set the approximate number of gradations (also depends on the min/max range)

Set the type of subgradation: None (no subgradation marker), Grid (a vertical line), or Tick (marks on the axis between the value label positions)

Set the number of subgradations between each value label

By swapping the min and max can swap the positive direction.

Axis Specific Attributes(X–Axis)

| General | **X–Axis** | Y–Axis |

☐ **Visible**

Origin [0.200]   Size [0.750]

Title

Title [   ]   Insert Symbol...

Size [55.000]

R [1.00]   G [1.00]   B [1.00]   Mix...

Value Labels

Type [All ▢]   Size [40.000]

Scale [Linear ▢]

Min [0.0000e+00]   Max [1.0000e+00]

Swap Min/Max

Format [%g]   Format...

R [1.00]   G [1.00]   B [1.00]   Mix...

Gradation/Sub-Grad

Grad Type [Tick ▢]   # of [5]

SubG Type [None ▢]   # of [2]
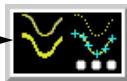
Close   Help...

Set Curve Attributes

Curve attributes are controlled through the Curve Specific Attributes dialog:

1. Click Plot in the Mode Selection area to enter Plot mode.

2. Select the desired curve(s) by clicking on them in the Graphics Window (control-click to select multiple curves).

If no curves are selected, any changes are applied to the curve defaults which will effect any curves created in the future.

3. Click the Curve Attributes icon.

Set the description text for the curve (this will appear as the legend)

If desired, you can apply scale factors to your x and/or y data

Set the line width

Set the line style

Set the line type:
 None (only curve markers are drawn),
 Connect Dots (data points are connected by straight lines),
 Smooth (a piece wise spline is fit to the data points using the number of points specified in the Smooth Sub-points field)

Set the marker type

Set the size of the markers

Normalize x and/or y values, if desired.

Set the color of the curve

Curve Specific Attributes

Desc	Pressure
Scale X By	1.000000
Scale Y By	1.000000
Line Width	1 Pixel
Line Style	Dotted
Line Type	Connect Dots
Smooth Sub-points	3
Marker Type	Square
Scale	1.000000
Normalize Values	□ X □ Y
R 1.00 G 0.00 B 0.00	Mix...
Close	Help...

Delete Plotters

Existing plotters can be deleted:

1. Click Plot in the Mode Selection area to enter Plot mode.

2. Select the desired plotter(s).

3. Click the Delete icon.

Note that deleting a plotter has no effect on any query entities that were attached to the plotter

Select All

You can select all curves or all plotters.

Plot Selection Options

Select All Curves

Select All Plotters

Close

SEE ALSO

How To Query/Plot

User Manual: **Plot Mode**